#15 AF/2174

TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. PO9-99-067

Re Application Of: **Chang et al.**

03/05/04

Serial No.	Filing Date	Examiner	Group Art Unit
09/411,515	10/04/99	Adnan M. Mirza	2141

Invention: **RECONFIGURING A NETWORK BY UTILIZING A PREDETERMINED LENGTH QUIESCENT**

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on **December 31, 2003**

The fee for filing this Appeal Brief is: **$330.00**

☐ A check in the amount of the fee is enclosed.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **09-0463 (IBM)**

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Dated: **February 24, 2004**

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#15
03/05/04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants: Chang et al. : Group Art Unit: 2141

Serial No.: 09/411,515 : Examiner: Adnan M. Mirza

Filed: October 4, 1999 : Appeal No.:

For: RECONFIGURING A NETWORK BY UTILIZING A PREDETERMINED LENGTH QUIESCENT STATE

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Brief of Appellants

Dear Sir:

This is an appeal from a final rejection, dated November 14, 2003, rejecting claims 1-52, all the claims being considered in the above-identified application. This Brief is accompanied by a transmittal letter authorizing the charging of appellants' deposit account for payment of the requisite fee set forth in 37 C.F.R. §1.17(c).

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Real Party In Interest

This application is assigned to **International Business Machines Corporation** by virtue of an assignment executed on October 1, 1999 and October 4, 1999 by the co-inventors and recorded with the United States Patent and Trademark Office at reel 010295, frame 0848, on October 4, 1999. Therefore, the real party in interest is **International Business Machines Corporation**.

Related Appeals and Interferences

To the knowledge of the appellants, appellants' undersigned legal representative, and the assignee, there are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the instant appeal.

Status of Claims

This patent application was filed on October 4, 1999 with the United States Patent and Trademark Office. As filed, the application included fifty-two (52) claims, of which four (4) were independent claims (i.e., claims 1, 18, 35 & 36).

In an initial Office Action dated April 23, 2002, claims 1, 5, 8, 10-13, 15, 18, 22, 25, 27-30, 32, 40, 43, 45-48 & 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde et al. (U.S. Patent No. 4,503,535; hereinafter, "Budde") in view of Fischer et al. (U.S. Patent No. 5,001,472; hereinafter, "Fischer"); claims 2, 3, 7, 19, 20, 24, 35-38 & 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer as applied to claim 1, and further in view of Brown et al. (U.S. Patent No. 4,860,284; hereinafter, "Brown"); and claims 4, 6, 9, 14, 16, 17, 21, 23, 26, 31, 34, 35, 39, 41, 44, 49, 51 & 52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer, Brown, and further in view of Moiin et al. (U.S. Patent No. 6,192,483; hereinafter, "Moiin"). In appellants' response dated July 23, 2002, no claims were amended.

In a second and final Office Action dated October 8, 2002, claims 1, 5, 8, 10-13, 15, 18, 22, 25, 27-30, 32, 40, 43, 45-48 & 50 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer; claims 2, 3, 7, 19, 20, 24, 35-38 & 42 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer as applied to claim 1, and further in view of Brown; and claims 4, 6, 9, 14, 16, 17, 21, 23, 26, 31, 34, 35, 39, 41, 44, 49, 51 & 52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Budde in view of Fischer, Brown, and further in view of Moiin. In appellants' response dated December 20, 2002, no claims were amended.

Appellants received an Advisory Action dated January 13, 2003, which indicated that appellants' Response to the final Office Action did not place the application in condition for allowance.

A Notice of Appeal to the Board of Patent Appeals and Interferences was filed on January 30, 2003, and a Brief of Appellants filed on March 10, 2003.

Responsive to Appellants' Brief, prosecution was reopened and a new non-final Office Action was issued on June 2, 2003. In this new Office Action, claim 1 was rejected under 35 U.S.C. 112, first paragraph, as being based on a disclosure which was not enabling. Additionally, claims 1-2, 7-19, 24-37 & 42-52 were rejected under 35 U.S.C. 103(a) as being unpatentable over Moiin et al. (U.S. Patent No. 6,108,699; hereinafter "Moiin") and Bertin et al. (U.S. Patent No. 6,400,681; hereinafter Bertin), while claims 3-6, 20-23 & 38-41 were rejected under 35 U.S.C. 103(a) as being unpatentable over Moiin and Bertin and further in view of Frank et al. (U.S. Patent No. 6,532,494; hereinafter "Frank"). In appellants' response dated September 2, 2003, no claims were amended.

Appellants received a final Office Action dated November 14, 2003 withdrawing the 35 U.S.C. 112 rejection, and repeating the 35 U.S.C. 103(a) rejection of claims 1-2, 7-19, 24-37 & 42-52 over Moiin and Bertin, as well as the 35 U.S.C. 103(a) rejection of claims 3-6, 20-23 & 38-41 over Moiin, Bertin and Frank.

A Notice of Appeal to the Board of Patent Appeals and Interferences was filed on December 31, 2003. The status of the claims is therefore as follows:

Claims allowed – none;
Claims objected to – none;
Claims rejected – 1-52; and
Claims canceled – none.

Appellants are appealing the rejection of claims 1-52.

Status of Amendments

Appellants proffered no response to the final Office Action dated November 14, 2003. The claims as set out in the Appendix include all prior entered amendments.

Summary of the Invention

Appellants' invention is directed to a technique for reconfiguring a network having a plurality of nodes 101, 102, 103 & 104 (FIG. 1) to reflect a change in topology of the network (FIGs. 4a-4g and FIG. 5). The technique includes, upon receiving a reconfiguration request 1010 (FIG. 10) at one node of the plurality of nodes, entering a quiescent state 1025 (FIG. 10) at the one node, wherein the one node remains in the quiescent state for a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to also enter a quiescent state (specification, page 15, lines 18-23); and upon termination of the quiescent state 1035 (FIG. 10) at the one node, reconfiguring the one node to reflect the change in topology of the network 1040 (FIG. 10) without checking with the at least one other node (see specification, page 19, lines 15-17).

In one particular aspect, the predetermined period of time includes an amount of time sufficient to transmit a reconfiguration request 915 (FIG. 9) from one node to at least one other node. The receipt of this reconfiguration request causes the at least one other node to enter a

quiescent state (see specification, page 15, lines 14-23). In another aspect, the predetermined period of time includes an amount of time sufficient for protocols currently running on the network to complete execution (see specification, page 15, lines 12-14). In still another aspect, the protocols include heartbeat, join, death and node reachability protocols (specification, page 10, lines 12-14; page 10, lines 23-24; page 12, lines 19-22; and page 13, lines 4-6; see also FIGs. 3, 4a-4g, 5, 6a-6b, generally). In a further aspect, the invention includes preventing, by the node in the quiescent state, execution of new protocols by ignoring proclaim, join, node connectivity and group connectivity messages, and by no longer monitoring heartbeat messages 1030 (FIG. 10; see specification, page 17, lines 1-6). In a still further aspect, the invention includes transmitting, by the node when in the quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to the at least one other node 1030 (FIG. 10; see specification, page 16, lines 13-19; page 17, lines 12-14).

Issues

1. Whether claims 1-2, 7-19, 24-37 & 42-52 were rendered obvious under 35 U.S.C. 103(a) by Moiin in view of Bertin.

2. Whether claims 3-6, 20-23 & 38-41 were rendered obvious under 35 U.S.C. 103(a) by Moiin in view of Bertin and further in view of Frank.

Grouping of Claims

Since each ground of rejection provides a group of claims, the following groups of claims are included herein:

I. Claims 1-2, 7-19, 24-37 & 42-52

II. Claims 3-6, 20-23 & 38-41.

As understood, the claims of one Group of claims do not stand or fall with the other Group of claims. Rather, each Group of claims is decided independently of the other Group of claims.

Additionally, appellants respectfully submit that within the Groups, the claims do not stand or fall together. For example, claims 7, 8, 11, 12, 24, 25, 28, 29, 42, 43, 46, & 47 each include additional features that provide separate basis of patentability.

Argument

Group I: Claims 1-2, 7-19, 24-37 & 42-52

As noted, claims 1-2, 7-19, 24-37 & 42-52 stand rejected as obvious over Moiin in view of Bertin. Reversal of this rejection is respectfully requested.

Initially, appellants note that both Moiin and Bertin fail to disclose reconfiguring a node upon termination of a quiescent state. This aspect of appellants' independent claims does not appear to be addressed by the Office Action. At the bottom of page three, the Office Action does state that Moiin does not disclose reconfiguring a node to reflect a change in topology of the network without checking with at least one other node. However, this paraphrase of the appellants' claimed invention omits appellants' recited concept of proceeding with the reconfiguration of the one node after termination of the quiescent state at the one node. Since the Office Action does not address this feature of appellants' independent claims, and since neither Moiin nor Bertin discuss such a concept, appellants respectfully submit that this deficiency at least renders incomplete a rejection based on an alleged combination of Moiin and Bertin. For at least this reason, reversal of the obviousness rejections is requested.

Moiin describes a technique for modifying membership in a clustered distributed computer system and updating system configuration. In Moiin, each node receiving a reconfiguration message, which is referred to as a petitioned node, determines all other nodes which the node is connected to and responds with a reconfiguration message which proposes a respective new cluster including all such nodes. The petitioned nodes collect all reconfiguration

messages, and if the reconfiguration messages unanimously propose the same proposed cluster, the proposed cluster is accepted as a new configuration. Unanimous agreement as to membership in the cluster is required by Moiin. In another aspect, multiple nodes can leave a cluster simultaneously. Failure to receive messages from a particular node in a predetermined period is detected as a failure of the node. In response to a detected failure, the node detecting the failure sends a reconfiguration message. Each node receiving the reconfiguration message broadcasts in response thereto a reconfiguration message to all other nodes and determines from which nodes a reconfiguration message is received back. Thus, each node determines which other node is operatively connected and configures a proposed new cluster which includes as members the connected nodes.

For an alleged teaching of various aspects of appellants' claimed invention, the Office Action references column 2, lines 23-34 & 39-47 of Moiin. The applicability of this discussion in Moiin, as well as the characterization thereof relative to appellants' invention is respectfully traversed.

Appellants' independent claims recite: "...upon receiving a configuration request at one node of the plurality of nodes, entering a quiescent state at the one node, wherein the one node remains in a quiescent state for a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to also enter a quiescent state ..."

Appellants recite functionality in their process which states that the quiescent state entered by the node after receiving a reconfiguration request is for a sufficient period of time to allow at least one other node of the network to also enter a quiescent state. No such functionality is described by the applied art. In Moiin, the predetermined period discussed at column 2 (referenced in the Office Action) refers to a failure to receive messages from a particular node for a predetermined period. This failure to receive messages from a node is determined as a failure of the node. Clearly, this use of the predetermined period in Moiin is in a different process than that recited by appellants. The final Office Action also references column 10, lines 48-54 of Moiin for an alleged teaching of appellants' recited process. In column 10, Moiin refers to a cluster membership monitor (CMM) receiving a reconfiguration message, then broadcasting a reconfiguration message to all nodes in a cluster. The CCM then waits for a predetermined amount of time during which it receives reconfiguration messages from all nodes in the current

cluster to determine which of the nodes in the cluster are in communication therewith and operational. This predetermined period of time is 30 seconds in Moiin. In contrast, appellants' process recites entering a quiescent state at a node upon receiving a configuration request at that node, wherein the node remains in the quiescent state for a predetermined time sufficient to allow at least one other node to also enter a quiescent state. A careful reading of Moiin fails to uncover any implication that the CCM is in a quiescent state or that the period of time specified therein (i.e., 30 seconds) is in any way related to a node of the plurality of nodes also entering a quiescent state as specified by appellants in the independent claims presented.

Further, Moiin fails to teach or suggest appellants' claimed element of upon determination of the quiescent state, reconfiguring the node to reflect the change in topology network without checking with at least one other node. (For example, claim 1.) Appellants note that it is admitted at the bottom of page three of the Office Action that Moiin fails to disclose this element.

For the above reasons, appellants respectfully submit that Moiin fails to teach or suggest multiple aspects of their claimed invention.

Bertin fails to overcome the deficiencies of Moiin as applied against appellants' claimed invention. Bertin is directed to a technique for minimizing the connection set up time in high speed packet switching networks. The Office Action references column 8, lines 34-44 of Bertin, which state:

> The network topology information is updated when new links are activated, new nodes added to the network, when links or nodes are dropped, or when link loads change significantly. Such information is exchanged by means of control messages with all other Route Controllers to provide the up-to-date topological information needed for path selection (such database updates are carried on packets very similar to the data packets exchanged between end users of the network). The fact that the network topology is kept current in every node through continuous updates allows dynamic network reconfigurations without disrupting end users logical connections (sessions).

A careful review of the above-noted material from Bertin fails to uncover any, suggestion or implication of the above-noted deficiencies of Moiin when applied against the independent claims presented herein. Although there is discussion of maintaining network topology current

in every node, there is no discussion in Bertin of: (1) responsive to receiving a reconfiguration request entering a quiescent state at that node, wherein the quiescent state is a sufficient predetermined period of time to allow at least one other node of the network to enter a quiescent state; and (2) upon terminating the quiescent state at that one node then reconfiguring the one node to reflect the change in topology of the network without checking with at least one other node.

More particularly, there is no discussion in Bertin (or Moiin) of a node entering and remaining in a quiescent state for a predetermined period of time sufficient to allow at least one other node of the plurality of nodes to also enter a quiescent state. This aspect of the claimed invention is missing from Bertin (and Moiin).

Further, there is no discussion in Bertin, and in particular, column 8, lines 34-44 (cited in the Office Action), of reconfiguring a node to reflect the change in topology, upon termination of the quiescent state, without checking with the at least one other node. In Bertin, reconfiguration is performed to continuous updates.

In view of the differences noted above, appellants respectfully submit that their invention as recited in independent claims 1, 18, 35 & 36 would not have been obvious to one of ordinary skill in the art based upon the teachings of Moiin and Bertin. Therefore, reversal of the obviousness rejection to these claims is requested.

The dependent claims are believed patentable for the same reasons as the independent claims from which they directly or ultimately depend, as well as for their own additional characterizations. For example, claims 7, 8, 11 & 12 (as well as the corresponding system claims 24, 25, 28 & 29 and article of manufacture claims 42, 43, 46 & 47) are believed to recite separate basis for patentability.

Claim 7 repeats the subject matter of claim 1, and further adds the characterization that the reconfiguring of the one node occurs without any communication to the node from the at least one other node of the plurality of nodes. The at least one other node of the plurality of nodes is the node that has also entered a quiescent state while the one node is in its quiescent state. In the Office Action, column 2, lines 40-46 of Moiin are cited as teaching appellants'

recited invention. Appellants traverse this citation and respectfully submit that if the one other node is defective as taught in Moiin, then the one other node would not meet the protocol of appellants' independent claims, wherein the quiescent state is entered by the one node for a predetermined period of time sufficient to allow the at least one other node to also enter a quiescent state. If the at least one other node has failed, then the at least one other node would not be entering a quiescent state while the first node is in its quiescent state. Further, the predetermined timeout period discussed in Moiin at column 2, lines 40-46 is unrelated to appellants' recited functionality since Moiin is using a predetermined timeout period to determine whether a node has failed. Appellants use a quiescent state in a protocol to efficiently reconfigure a network with minimal exchanging of messages.

Claim 8 specifies that the reconfiguring of the one node includes refraining from observing the change in topology at the one node during a grace period. The grace period is a predetermined period of time sufficient to allow the at least one other node of the plurality of nodes to exit its quiescent state, and upon termination of the grace period, appellants recite observing the change in topology at the one node. Thus, in appellants' protocol, two predetermined periods of time are employed, i.e., the quiescent period and the grace period. Moiin, column 6, lines 1-15 is cited for an alleged teaching of this concept. However, a careful reading of Moiin fails to uncover any teaching or suggestion of using two predefined periods of time in a manner recited by appellants' protocol. Moiin only describes the use of one predetermined period of time to receive reconfiguration messages from other nodes. Further, the use of the predetermined period of time in Moiin is for a different purpose and process than that recited by appellants. The citation to Frank does not cure these deficiencies of Moiin.

In claim 11, appellants recite that the network is reconfigured without interrupting currently executing protocols. A careful reading of Moiin, column 6, lines 50-56 (cited in the Office Action) fails to uncover any suggestion that the network is reconfigured without interrupting currently executing protocols. The citation to Moiin at column 6 involves a specific case where a node deems itself isolated when all communication links between the node and other nodes of a distributed computer system fail. In contrast, appellants recite in claim 11 that the network itself is reconfigured without interrupting currently executing protocols. Column 6 of Moiin does not address appellants' recited further characterization on the independent claims.

In claim 12, appellants recite that the network is reconfigured without use of a global synchronization protocol. The Office Action references Moiin, column 6, lines 1-15 for an alleged teaching of this concept. However, these lines of Moiin describe a process for waiting to receive reconfiguration messages from all nodes. This act of waiting to receive reconfiguration messages is itself a synchronization protocol, and therefore the cited lines of Moiin actually teach away from appellants' recited invention.

For the above reasons, appellants respectfully request reversal of the obviousness rejection to the claims of Group I.

Group II: Claims 3-6, 20-23 & 38-41

Claims 3-6, 20-23 & 38-41 stand rejected as obvious over Moiin and Bertin and further in view of Frank. Reversal of this rejection is also respectfully requested.

As described above, Moiin and Bertin fail to describe or suggest at least appellants' claimed features of entering a quiescent state upon receiving a reconfiguration request at a node, and remaining in a quiescent state for a predetermined time sufficient to allow for at least one other node to also enter a quiescent state, and upon termination of the quiescent state at the node, reconfiguring the one node without checking with the at least one other node.

Frank fails to overcome the deficiencies of Moiin and Bertin when applied against appellants' claimed invention. For example, Frank fails to describe or suggest use of a quiescent state when reconfiguring. Frank describes at Col. 5, lines 18-20, that if a node fails to receive a heartbeat message from another node within a predetermined time interval, then a cluster enters reconfiguration mode. Thus, the use of a predetermined time interval in Frank is to ascertain whether a node becomes non-responsive, which is a different concept and process than that recited by appellants and summarized above. For these reasons, appellants respectfully request reversal of the obviousness rejection to claims 3-6, 20-23 & 38-41.

Claims 3, 20 & 38 repeat the subject matter of their respective independent claims and further recite that the predetermined period of time of the quiescent state is an amount of time sufficient for protocols currently running on the network to complete execution. Frank, at column 5, lines 18-23, indicates that in reconfiguration mode, all user applications executing on

the network cluster are stalled until the cluster membership is once again verified. This is contrasted with appellants' recited subject matter of these claims, wherein the predetermined period of time of the quiescent state is sufficient by itself for protocols currently running on the network to complete execution. Since Frank teaches stalling execution of user applications, appellants respectfully submit that the combination does not teach to one of ordinary skill in the art appellants' recited subject matter of claims 3, 20 & 38.

For the above reasons, appellants respectfully request reversal of the obviousness rejection to all claims of Group II.

Conclusion

Appellants request reversal of the rejections set forth in the final Office Action. Appellants respectfully submit that their claimed invention would not have been rendered obvious by Moiin, Bertin, and/or Frank. These patents do not, individually or in combination, teach or imply appellants' recited technique for reconfiguring a network which includes, for example, receiving a reconfiguration request at one node, responsive to receiving the reconfiguration request, entering a quiescing state at that one node, wherein the quiescent state is for a sufficient predetermined period of time to allow at least one other node of the network to also enter a quiescent state, and upon terminating the quiescent state at that one node, then reconfiguring the one node to reflect the change in topology of the network without checking with the at least one of the node.

For all the above reasons, appellants allege error in rejecting their claims as obvious, based upon Moiin, Bertin and Frank. Accordingly, reversal of the rejections is respectfully requested.

Respectfully submitted,

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Dated: February 24, 2004

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Appendix

1. A method of reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said method comprising:

upon receiving a reconfiguration request at one node of said plurality of nodes, entering a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

upon termination of said quiescent state at said one node, reconfiguring said one node to reflect said change in topology of said network without checking with said at least one other node.

2. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

3. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

4. The method of claim 3, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

5. The method of claim 1, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

6. The method of claim 5, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

7. The method of claim 1, wherein said reconfiguring said one node occurs without any communication to said node from said at least one other node of said plurality of nodes.

8. The method of claim 1, wherein said reconfiguring said one node comprises refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, observing said change in topology at said one node.

9. The method of claim 1, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

10. The method of claim 1, where said reconfiguration request results from a change in address of a node of said network.

11. The method of claim 1, wherein said network is reconfigured without interrupting currently executing protocols.

12. The method of claim 1, wherein said network is reconfigured without a global synchronization protocol.

13. The method of claim 1, further comprising transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

14. The method of claim 13, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier and a message having a configuration

sequence identifier different from a configuration identifier of said one node.

15. The method of claim 1, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

16. The method of claim 1, further comprising preventing, by said node when in said quiescent state, execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

17. The method of claim 1, further comprising transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.

18. A system for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said system comprising:

means for entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

means for reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

19. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

20. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

21. The system of claim 20, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

22. The system of claim 18, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

23. The system of claim 22, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

24. The system of claim 18, wherein said means for reconfiguring said one node reconfigures without any communication to said node from said at least one other node of said plurality of nodes.

25. The system of claim 18, wherein said means for reconfiguring said one node comprises means for refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, for observing said change in topology at said one node.

26. The system of claim 18, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

27. The system of claim 18, where said reconfiguration request results from a change in address of a node of said network.

28. The system of claim 18, wherein said network is reconfigured without interrupting currently executing protocols.

29. The system of claim 18, wherein said network is reconfigured without a global synchronization protocol.

30. The system of claim 18, further comprising means for transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

31. The system of claim 30, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier or a message having a configuration sequence identifier different from a configuration identifier of said one node.

32. The system of claim 18, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

33. The system of claim 18, further comprising means for preventing, by said node when in said quiescent state, execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

34. The system of claim 18, further comprising means for transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.

35. A system for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said system comprising:

a computing node capable of entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; said computing node further being capable of reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

36. An article of manufacture comprising:

a computer useable medium having computer readable program code means embodied therein for reconfiguring a network having a plurality of nodes to reflect a change in topology of said network, said article of manufacturing comprising:

computer readable program code means for entering, upon receiving a reconfiguration request at one node of said plurality of nodes, a quiescent state at said one node, wherein said one node remains in said quiescent state for a predetermined period of time sufficient to allow at least one other node of said plurality of nodes to also enter a quiescent state; and

computer readable program code means for reconfiguring, upon termination of said quiescent state at said one node, said one node to reflect said change in topology of said network without checking with said at least one other node.

37. The article of manufacturing of claim 36, wherein said predetermined period of time comprises an amount of time sufficient to transmit a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

38. The article of manufacturing of claim 36, wherein said predetermined period of

time comprises an amount of time sufficient for protocols currently running on said network to complete execution.

39. The article of manufacturing of claim 38, wherein said protocols comprise one of a heart beat, join, death, or node reachability protocol.

40. The article of manufacturing of claim 36, wherein said predetermined period of time comprises an amount of time sufficient for a protocol currently running on said network to perform a predetermined number of retries plus a predetermined amount of time between each retry, wherein after attempting said predetermined number of retries, said protocol completes execution.

41. The article of manufacturing of claim 40, wherein said protocol comprises one of a heart beat, join, death, or node reachability protocol.

42. The article of manufacturing of claim 36, wherein said computer readable program code means for reconfiguring said one node reconfigures without any communication to said node from said at least one other node of said plurality of nodes.

43. The article of manufacturing of claim 36, wherein said computer readable program code means for reconfiguring said one node comprises computer readable program code means for refraining from observing said change in topology at said one node during a grace period, wherein said grace period comprises a predetermined period of time sufficient to allow said at least one other node of said plurality of nodes to exit a quiescent state, and upon termination of said grace period, for observing said change in topology at said one node.

44. The article of manufacturing of claim 36, wherein said reconfiguration request results from addition or removal of a node or of at least one other network to said network.

45. The article of manufacturing of claim 36, where said reconfiguration request results from a change in address of a node of said network.

46. The article of manufacturing of claim 36, wherein said network is reconfigured without interrupting currently executing protocols.

47. The article of manufacturing of claim 36, wherein said network is reconfigured without a global synchronization protocol.

48. The article of manufacturing of claim 36, further comprising computer readable program code means for transmitting, upon entering said quiescent state, a reconfiguration request from said one node to said at least one other node, wherein receipt of said reconfiguration request causes said at least one other node to enter a quiescent state.

49. The article of manufacturing of claim 48, wherein said reconfiguration request comprises one of a message having a reconfiguration sequence identifier and a message having a configuration sequence identifier different from a configuration identifier of said one node.

50. The article of manufacturing of claim 36, wherein said network comprises a plurality of interconnected computing networks together implementing a distributed node and adapter status monitoring system.

51. The article of manufacturing of claim 36, further comprising computer readable program code means for preventing, by said node when in said quiescent state, the execution of new protocols by ignoring proclaim, join, node connectivity, and group connectivity messages and by no longer monitoring heartbeat messages.

52. The article of manufacturing of claim 36, further comprising computer readable program code means for transmitting, by said node when in said quiescent state, proclaim, heartbeat, node connectivity, and group connectivity messages with a reconfiguration sequence identifier to propagate reconfiguration requests to said at least one other node.